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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Confirmation No: 4878

Yasuhiro HOURAI Attorney Docket No: 107439-00091

Serial Number: 10/644,010 Group Art Unit: 2836

Filed: August 20, 2003 Examiner: Ann Thi HOANG

For: EXCITATION CONTROL CIRCUIT FOR INTERMITTENTLY BYPASSING
RETURN CURRENT

SUPPLEMENTAL REPLY UNDER 37 C.F.R. §1.111

MAIL STOP: AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Date: January 30, 2006

Sir:

Pursuant to the requirements of 37 C.F.R. §§ 1.111(a)(2), and further to the Applicant's response, which was timely filed on January 12, 2006, please amend the above-identified application as set forth below.

Amendments to the Response begin on page 2; and

Remarks begin on page 3.

IN THE RESPONSE:

In the Response filed on January 12, 2006, responsive to the Office Action of October 12, 2005, please replace the first paragraph of page 8 of the response with the following paragraph:

In contrast, the present invention sets forth a "control circuit for outputting a pulse signal for intermittently bypassing the return current through the return current circuit while the return current attenuates." As shown in Figure 1, in one embodiment of the present invention, an uneven waveform due to intermittent bypassing operation is not produced by the pulse signal (SP) supplied to the driving circuit (120), but is produced in response to a pulse signal (SP) (SG) outputted by a gate control circuit 140. This gate control circuit 140 is separate from the driving circuit 120 that drives the coil. Murata does not disclose such a feature. In Murata, the same pulse signal generation circuit that controls transistor 1 also drives the solenoid coil 3.